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SRA Economics Materials in Grades One and Two. Evaluation Reports.

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A class of first graders and a class of second graders in four Salt Lake City schools comprised the experimental sample in a study whose objectives were (1) to develop a test for assessing learning with "Our Working World" materials, published by Science Research Associate (SRA), and (2) to determine if students using the materials made greater learning gains than students not using them. Four classes at each grade level were randomly selected from two schools and served as controls in the investigation. Approximately 400 children took part in the study. Both the experimentals and the controls were given the SRA Test of General Ability. The Primary Economic Test--First Grade (PET-1) of 64 items (devised for this project) was administered to the children after the materials had been used for 3 months. Analysis of covariance was used to adjust group means for differences of scholastic aptitude. It was concluded that (1) the assessment instrument (PET-1) was valuable in testing student progress and (2) the experimental first graders scored significantly higher on the test than did the control students. Attachment A of this document is the PET-1, attachment B contains instructions for administering the test, and attachment C is a chart of selected percentiles and the ranges for the experimental and control groups. (DO)

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EVALUATION REPORT

TITLE I OF PUBLIC LAW 89-10

Project Title: SRA Economics Materials in Grades One and Two

School District: Salt Lake City, Utah

Investigators: James P. Shaver and A. Guy Larkins

Utah State University

Date Completed: July 1, 1966

PS001821

A. The Problem

During the 1965-66 school year, funds from Public Law 89-10 were used to provide the Our Working World materials, developed by Lawrence Senesh and published by Science Research Associates (SRA), to the first and second-grade classes in nineteen "economically deprived" Salt Lake City schools. The Our Working World program is aimed primarily at the teaching of economic concepts, although other social science concepts are included. The materials were developed and used in the schools of Elkhart, Indiana and are coming to be rather widely used by other schools; however, there has been no systematic research reported investigating their effect on student learning. This lack of research has been accompanied by a failure to develop instruments for assessing student learning with the materials. Consequently, the desire of the Salt Lake Public Schools staff to evaluate their use of the materials raised two problems. The first was simply the question whether "economically deprived" students would show significant gains in learning when the materials were used in classroom instruction. To answer that question, however, a second problem - - the lack of an assessment instrument - - had to be met.

B. Objectives

The objectives of the investigation were, then, in the order in which they had to be accomplished: (1) To develop a test for assessing learning with the SRA Our Working World materials; and (2) to determine if the gains in learning of students using the SRA materials were greater than would have been expected had the materials not been used.

C. Procedures

1. Test Development. Validity was a major concern in developing a test for assessing student learning with the Our Working World materials. A curriculum development project will usually have some objectives which go unstated and are, therefore, difficult for anyone but the developer of the curriculum to measure. Some discussions with Lawrence Senesh by one of the investigators indicated that this was undoubtedly the case with the SRA materials. Nevertheless, it was decided that the best basis for valid test construction would be an analysis of the materials themselves.

All of the Our Working World materials for the two grades, including the teacher's resource book, which contains a general introduction to the program as well as specific lesson suggestions (28 at the first grade level and 15 at the second grade), phonograph records to be used as an introductory activity for each lesson, student text, and the student workbook, were gone through carefully at least three times--once to gain an overview of the entire program, and twice to outline and obtain an estimate of the major concepts stressed. A stringent content analysis technique yielding an exact count of the sentences dealing with each concept was not used. Nevertheless, a careful reading and some tabulation indicated which concepts were covered most frequently in the various lessons. The person carrying out the analysis also gained a grasp of the level of complexity at which the various concepts were taught. This analysis of the materials was used as the basis for the development of test items.

As test items were developed, it became clear to the investigators that the resources provided for the investigation would not be adequate to the task of developing a test at both the first and second-grade levels. Consequently, viewing the project as the first step in a larger test development task, it

was decided, after consulting with the Social Studies Specialist for the Salt Lake Schools, to concentrate efforts on a test for the first-grade (Families at Work) materials. This test could then be used to determine how many of the concepts taught in the first grade were known by second-grade students who had not had the benefit of studying the SRA program in the first grade.

Over 250 items were prepared initially. These were in several forms, including interrogative and declarative statements to which the student would respond either "yes" or "no" and several types of multiple-choice questions. Sixty-four items were selected for inclusion in the first form of the test instrument. The basic criterion for item selection was that concepts be presented in the test in about the same proportion as in the materials. Given this basic working principle, items were included or excluded on the basis of judgments about the effectiveness with which they would measure knowledge of the concepts at the level of complexity at which they were presented by the materials. An attempt was also made to balance the number of items to which a "yes" or "no" response was correct.

The test went through four trial administrations, each followed by a revision, before being used in the Salt Lake City study. The major emphasis in each revision was toward simplifying the test in order to approximate the level of maturity of six- and seven-year-old children. It had already been decided that the test items should be read to the students without presenting them with written items. It was noted that the children in the trial groups tended to become confused in responding to multiple-choice items; therefore, all but four of these were changed to the "Yes" - "No" format. Also, the trial administrations indicated that first-graders tend to respond orally (they shout out the answers) to items in question form read aloud to them. So, all interrogative items were changed to the declarative form.

In addition, the testing time was shortened by reducing the number of items in the test, by speeding up the pace at which items were read by the test administrator, and by reducing the number of times that the tester stopped to give the students a rest break. In each of the four trial administrations, student fatigue and lack of interest were apparent toward the end of the testing period. However, both were reduced noticably when the pace of the test was speeded slightly so that the students' attention was not allowed to waver.

The result of the revisions was a 64 item test labeled the Primary Economics Test--First Grade (PET-1) in deference to the heavy loading of economics as opposed to other social science concepts in the SRA materials. Of the items, 60 require a "yes" or "no" response to a declarative statement, and four require that the student choose from three possible answers. (See Attachment A.) The time required to administer the test is 45 minutes.

2. Research Design. The research problem presented was clearcut. In order to determine if use of the SRA materials had brought about an extra increment in learning, a baseline had to be established. Therefore, a traditional experimental-control group comparison was planned. Students in classes taught with the SRA materials were compared against Salt Lake City pupils whose teachers did not use the materials.

Ordinarily in such a design, a pretest and posttest would be used, with the gain between the two testings serving as the basis for experimental-control comparisons. In this case, such was not possible. The research was instigated at about the same time that the materials were introduced in the experimental schools. As the PET-1 was yet to be developed, pretesting was impossible.

It should also be noted that, ideally, the evaluation of such materials would be based on their use for a full school year. Because Public Law 89-10 monies were not available earlier, the materials were not introduced into the classrooms until February, 1966. Consequently, this investigation is based on less than a half year of use.

One further caveat about design should be mentioned. In general, any effect of the SRA materials is confounded with a concurrent use of Title I funds to reduce teacher load in the "economically deprived" schools. This was noticeable during testing for the project: Experimental classrooms had fewer students than the control classes. However, no systematic effect on testing climate could be detected.

3. Data Analysis . With the general two-group design, the analysis of data is straightforward. The significance of any difference between the mean scores of the experimental and control groups on the dependent variable can be checked using the t-test. However, even with the random sampling techniques to be described in the next section, the experimental and control groups could differ in scholastic aptitude, a variable that would likely be related to knowledge of economic and other social science concepts. For that reason, the SRA Test of General Ability (TOGA) was administered to the students. Analysis of covariance could then be used to adjust the group means on the PET-1 for any differences in group scholastic aptitude as measured by the TOGA, if indeed there were differences between the groups on the latter measure and scores on it were correlated with performance on the PET-1.

4. Sample. Evaluation is always a problem with projects that are primarily curriculum oriented. It is difficult to justify diverting to the evaluation process funds that could be used to supply instructional materials or assistance.

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For that reason, evaluation is often less then optimum; and that is the case with this project. Several compromises were made. The decision to develop a test only for the first-grade materials has already been noted. (Happily, as we will note later, this decision provided the basis for a validity judgment once the test data were in.) The best possible research sample was selected, given the available resources.

Testing all of the first and second-grade students in the nineteen "economically deprived" schools in which the materials were used would have been uneconomical in the light of what is known about sampling. For that reason, it was decided that a sample of 100 students would be drawn from each grade level in the experimental schools, with a sample of 100 control students to be used at each grade level. Ideally, the 200 experimental students should have been drawn at random from the total group of close to 1200 students involved in the SRA program. This probably would have meant testing a few students in each of the nineteen schools. Such a procedure was not possible with a limited staff. As an alternative, four experimental schools were selected at random (the schools were numbered one through nineteen, and four schools selected using a table of random numbers), and within each school a class of first-graders and a class of second-graders was selected also using a table of random numbers. In one school, because students were ability-grouped, students representing a range of ability were selected from two classes at each grade level for testing purposes.

As the criterion for participation in ESEA Title I projects is an arbitrary economic one, several Salt Lake City schools were just over the borderline for inclusion in the project. Four classes at each grade level were selected randomly from two of the three schools closest to the criterion. The students in these eight classes served as controls in the investigation.

5. Test Administration. A uniform set of instructions was developed for administering the PET-1. (See Attachment B.) The instructions were revised following each of the trial administrations of the test on the basis of the testers' experiences and the suggestions of the teachers whose classes were used. Eight items on the PET-1 involve showing the students a picture and asking them to make a judgment based on it (for example, Is this person a consumer or a producer?). The use of these pictures was also modified during the trial administrations, and identical sets of photocopied line drawings made up for the Salt Lake City testing.

Five test administrators, including the two investigators, were used in obtaining the Salt Lake City data. Four of these testers had teaching experience in the primary grades; the other, Dr. Shaver, conducted one of the trial administrations prior to the Salt Lake testing. Three of the testers had administered the PET-1 before the project testing; the other two had observed an administration of the revised test and participated in two critiques of the administration procedures.

The PET-1 was administered on Tuesday and Wednesday, May 10 and 11, 1966. With one exception, each tester administered no more than two tests a day. This arrangement was used to reduce the possible effect of tester fatigue on test administration and to allow ample time to travel from school to school between testing periods.

As no class had been taught all of the lessons in the SRA materials, a special effort was made to reassure the students that they were not expected to know all of the answers. They were encouraged to guess at answers about which they were not certain.

During the trial administrations of the test, it was noted that first-graders tend to seek aid from their neighbors rather readily. In administering

the tests in the Salt Lake City classrooms, the regular classroom teacher's assistance was sought in reducing the student's opportunities to look at his neighbor's paper. A uniform procedure was not practicable since the number of students and type of seating varied from room to room. A common solution, however, was to have the students set up books between one another. In addition, the regular teacher stayed in the room to help monitor the students during the testing. These precautions seemed an adequate solution to the problem. In addition, the cooperativeness of the regular teachers and their presence in the room generally helped to provide a climate conducive to good test performance.

The TOGA. The Test of General Ability was administered by the classroom teachers one week prior to the administration of the PET-1. These testings took place on Monday or Tuesday of that week, with one exception. One teacher was slated for surgery on that Monday, so she administered the test the previous Friday in case her substitute might not be able to establish as desirable a testing climate.

D. Findings

1. Test Reliability. An estimate of the consistency with which students perform is essential to evaluating a test and interpreting results obtained with it. Two techniques were used for estimating the reliability of the PET-1, the Kuder-Richardson Formula 21 and split-half correlations. Both provide an estimate of the internal consistency of test responses. The results are presented in Table 1. The coefficients, while not particularly high are encouraging

Table 1

Reliability Coefficients for the PET-1 for the First-Grade Testing in Salt Lake City

	Kuder-Richardson	Split-half*
Control Group	.35	.28
Experimental Group	.41	.56

*Corrected with the Spearman-Brown Prophecy Formula

given the testing context. Note that the reliability coefficients are lower for the control group than for the experimental group. This is an indication of the validity of the PET-1, as students who had studied the content measured would be expected to respond more consistently (i.e., in less random fashion) than control students. By the same token, it is likely that the reliability coefficients for the experimental group would have been higher had the test been administered after the students had completed the entire year's program. Reliability estimates for the second-grade administration would have shed further light on the notion that the low coefficients for the first grade were due to brevity of exposure to the SRA materials. These were not computed, however, because, as will be noted shortly, significant differences between the second-grade experimental and control groups did not emerge on the PET-1.

2. Materials Evaluation. The major question for the investigation was whether students in the Our Working World classrooms would show a significant increment in learning as compared to the control students. The results of this analysis are shown in Table 2. The use of analysis of covariance is justified

Table 2

Comparison of Experimental and Control Students

on the Primary Economics Test--Grade One

	N	Means TOGA	S.D.[a]	D[b]	Means on PET-1	S.D.[a]	D[b]	Adjusted means PET-1	D[b]	F-Ratio for PET-1
First Grade										
Experimental	86	42.84	8.28	2.25	39.90	4.40	3.26	39.62	2.70	18.19*
Control	95	40.59	7.94		36.64	4.45		36.92		
Second Grade										
Experimental	95	33.16	8.02	.72	40.29	4.31	.20	**	**	**
Control	90	33.88	8.14		40.49	4.16		**		**

[a] S.D. stands for Standard Deviation.
[b] D stands for difference between means.
*With d.f. = 1/178, a F-Ratio of 11.38 is required to be significant at the .001 level.
**Covariance not computed because no difference was indicated by inspection.

only if the groups differ on the proposed control variable and it is correlated with the dependent variable. Table 2 indicates that the two first-grade groups did have differing mean scores on the SRA Test of General Ability, and Table 3 indicates that scores on the TOGA and on the PET-1 are correlated.

Table 3

Correlations between the Test of General Ability

and the Primary Economics Test--Grade One

Group	Coefficient
First Grade	
Experimental	.46
Control	.55
Second Grade	
Experimental	.38
Control	.54

Because of the mean differences in TOGA scores and the high correlations, analysis of covariance was used, and the resulting F-Ratio is reported in Table 2.

The obtained F-Ratio comparing the adjusted means is significant at the .001 level; we would expect to find a difference this large by chance only one time in a thousand. An analysis of covariance was not computed for the second-grade groups because of the obviously small difference between the TOGA and PET-1 means. The lack of a significant difference on the PET-1 with the second-grade testing is not surprising since the PET-1 is based on the SRA first-grade material. In fact, the lack of a significant difference between the second-grade groups supports the validity of the PET-1; it should be more prone to reflect differences in learning for students who study the materials upon which it is based.

While comparison of the group means tested the main objective of the study, an item analysis of the PET-1 might be helpful for two reasons: (1) to indicate which items discriminated between the experimental and control groups so should be retained in the test; and, (2) to determine which concepts were better learned by the experimental group. However, an item analysis for the first reason would make little sense when the students had not studied all of the material covered by the test. Chi Square was used to test the difference in frequency of right and wrong answers on the various items for the two first-grade groups in hopes of obtaining an indication of concept learning. The results were somewhat inconclusive. Taken individually, eleven of the sixty-four items in the test discriminated beyond the .05 level of significance. However, two of these favor the control group. This finding is not unexpected since most of the first grade teachers using the SRA materials were able to teach no more than the first five to seven lessons out of a total of twenty-eight.

One important conceptual distinction emphasized in the first few lessons is that between producers and consumers. Eight similar items on the PET-1 ask the student to decide whether a person in a picture is a producer or a consumer. Only two of these items, taken individually, discriminated significantly between the control and experimental students (both at the .01 level). However, when the Chi Squares for the eight items were pooled, a value of 21.87 resulted. With six degrees of freedom, this value is significant beyond the .01 level. It seems, then, that aking the eight items as a whole, the SRA materials were successful in teaching the producer-consumer distinction. However, one item contradicted this finding. While dealing with the producer-consumer concept, it was not based on a picture and was stated in different form. The control group did score higher on it (at the .01 level).

One other group of items bears mention. Senesh was concerned in developing the Our Working World program that the students learn that all cultures are not the same; that our culture reflects the environment in which we live. Three items on the PET-1 deal with cultural differences by asking the students whether almost every family in the world has a telephone and T.V. and whether we could get along without T.V. Each of the items discriminated between the experimental and control groups beyond the .01 level. The striking differences on these items indicate that the SRA materials apparently did alert the students to cultural differences.

One other outcome of the data analysis should be noted, even though it is not central to the objectives of the study. The effects of the testing format on student responses must always be of interest to the educational evaluator. As a matter of interest in test development, the investigators were concerned with the effect that "yes-proneness" or "acquiescence set" might have on test

performance. It will be remembered that most of the items required the student to respond to a statement read by the tester by circling "Yes" or "No" on an answer sheet. For thirty-one of the items, a "No" response was correct; for twenty-nine, the "Yes response was correct. Table 4 reveals some very interesting response

Table 4

Mean Percentages of First-Grade Students

Responding Correctly by "Yes - "No" Item Type

Group	Items Correctly Answered "No"	Items Correctly Answered "Yes"
Experimental	46.74%	74.10%
Control	41.84%	70.72%

tendencies. Two things are clear: (1) Both experimental and control students are much more likely to get an item correct if the correct response is "Yes"; (2) regardless of whether "Yes" or "No" is the correct response, the experimental students tend to make a much higher percentage of correct responses. The latter result is expected on the basis of the significant F-Ratio reported in Table 2, favoring the experimental group. Lack of knowledge concerning yes-proneness could lead to serious misinterpretation of findings because it disrupts expected frequencies. Students' scores on "Yes" items will be spuriously high, while the converse will be true for "No" items.

E. Conclusions

It seems reasonable to conclude that the investigation has resulted in assessment instrument of value of the Salt Lake City School District in testing student progress with the Our Working World first-grade materials. While the reliability coefficents were not as high as might be desired, they should

increase when the test is administered to students who have spent the whole school year with the SRA materials. The validity of the test is assured by the procedures followed in developing it, and is further indicated by its success in discriminating between first-graders who had used the SRA materials and those who had not. Of course, the major finding of this study was that the experimental first-grade students did score significantly higher on the PET-1 than did the control students.

As with most research studies, however, this project has raised more new questions than it has answered old ones. A further analysis of test items when the respondents had completed a year with the Our Working World materials would reveal much about the value of individual items, and, even more important, about the extent to which specific concepts were being taught by the materials. Of course, a course of action similar to the latter stages of this project could be taken to complete the uncompleted development of a test for the second-grade.

The investigators have also identified problems of test format that need clarification. The "yes-proness" influence has already been noted. It is, however, impossible to tell whether these results are due to a tendency to select a "Yes" response when guessing or to the fact that the "Yes" response was always positioned first on the answer sheet. This could be readily investigated, and the findings would likely have interesting implications for test development for the primary grades. By the same token, the verbal form of the test does not seem entirely satisfactory, even though the items were read aloud to the students. It seems feasible to build a test comparable to the PET-1 in which every item would be based on picture-selection--much as is the case with many mental ability tests at the primary level, such as the SRA Test of General Ability.

Attachment A: Items and Answer Sheet for the Primary Economics Test--Grade One (PET-1)

Set 1

1. Almost every family in the world has a T.V.

2. Machines make it easier to do work.

3. Families today produce for themselves most of the things they need.

4. Income is money people get for doing useful work.

5. People save money because they have everything they want.

6. When each person in a family cooks his own breakfast and washes his own dishes they have divided the labor.

7. A specialist is anyone who is very important.

8. Each pioneer family produced for itself most of the things it needed.

9. People use money because money makes it easier to tell how much to pay for things.

10. John's grandmother lives in the same house as John. She is part of his distant family.

11. People save money to buy special things later on.

12. Pioneers had more tools and better tools than we have.

13. When a man gets money from the bank and says he will pay it back he is getting a loan.

14. Profit is money the worker gets for worrying.

15. Interest is money a man is paid for doing work.

After fifteen NOW WHERE DO WE GO? PUT YOUR FINGER ON SIXTEEN. YOU'RE DOING WELL.

16. Everyone is both a producer and a consumer.

17. Pioneers had more free time than we have.

18. Profit is money the businessman gets instead of wages.

19. We use more machines now than people used to use.

EVERYBODY LAY THEIR PENCILS DOWN. THAT'S RIGHT. I WANT YOU TO THINK ABOUT THIS ONE. (Read #20 to the children.)

20. Father makes $25 a day. He can save $100 if he paints the house himself. Father should stay home from work one day and paint the house.

21. Riding in a car is called transportation.

HERE'S ANOTHER THINKING QUESTION.

22. A man owns a store. In one day people gave him $100 for things they bought. His profit was $100.

23. Customs and rules help us to know what others will do.

24. A volunteer is someone who does not do useful work.

25. A man who gives money to the bank is borrowing.

26. Before he can go into business a baker needs tools.

27. Before he can go into business a baker needs workers.

28. People today have more jobs to choose from than pioneers had.

29. Utah is bigger than the United States.

30. Schools are paid for by taxes.

Set 2

1. A girl who comes to school late every day is breaking both a rule and a custom.

2. A boy who talks in class without raising his hand is breaking a rule but is not breaking a custom.

3. A boy who plays with dolls is breaking a custom.

4. A farmer who raises only one kind of food and buys the other food he needs is a specialist.

5. A shoe repair shop where one man does all the work has divided the labor.

6. A specialist can do more things for himself than a person who has not specialized.

7. A farmer who grows only one kind of food must depend on others more than a farmer who raises many kinds of food.

8. Pioneers got news by listening to the radio.

9. A tractor is a simple tool.

10. Utah is a city.

11. Jimmy wants a new bike. He wants a skateboard too. If Jimmy gets the new bike he will still want a new skateboard.

12. We can get along without food.

13. Grocery stores are paid for by taxes.

14. We can get along without television.

15. Pioneers traveled from place to place in wagons.

16. A specialist is a man who learns to do one job very well.

17. Almost every family in the world has a telephone.

18. A wheel is a simple tool.

19. Roads and highways are paid for by taxes.

20. Sally wants a new dress. If Sally gets the new dress she will want another dress just like her new one.

21. Money is easier to save than candy bars.

22. A man who uses horses to do his farm work will have more free time than a man who uses a tractor.

23. This is a picture of a baby crying. This baby is a producer.

24. This is a picture of a barber shop. A barber is a producer of goods.

25. This man is building bird houses. He is a producer of goods.

26. This man is a fireman. He is a producer of services.

27. This boy is putting out the garbage. He is a producer of goods.

28. This boy is brushing his teeth. He is a consumer.

29. This man is a tailor. He is making a suit. He is a producer.

30. This girl is eating ice cream. She is a producer.

Set 3

NOW LET'S TURN OUR YELLOW PAGE OVER AND WE WILL SEE A WHITE PAGE WITH PICTURES ON IT. WE DO THIS PAGE DIFFERENTLY, SO LISTEN CAREFULLY.

1. IN NUMBER ONE, WE HAVE A PICTURE OF A CAR AND A HAMMER. CIRCLE THE PICTURE OF A MACHINE.

2. IN NUMBER TWO, WE HAVE A PICTURE OF A NAIL AND A TRACTOR. CIRCLE THE PICTURE OF A MACHINE.

3. IN NUMBER THREE, WE HAVE A PICTURE OF A TRUCK AND A HORSE AND A WAGON. SOME PEOPLE USE TRUCKS TO CARRY THINGS. SOME USE HORSES AND WAGONS. WHICH WAY HELPS PEOPLE PRODUCE THE MOST? DRAW A CIRCLE AROUND IT.

4. IN NUMBER FOUR, WE HAVE A PICTURE OF A BAKER, A FIREMAN, AND A FARMER. DRAW A CIRCLE AROUND THE MAN WHO MIGHT BE A VOLUNTEER.

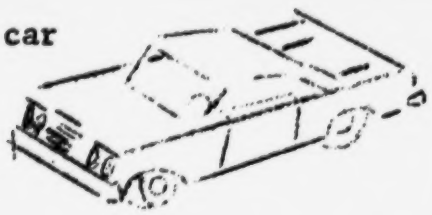
Answer Sheet: PET-1

NAME _____

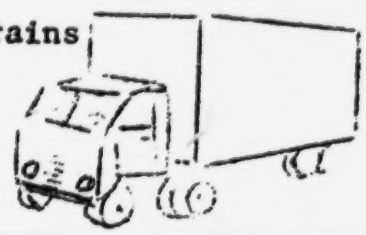
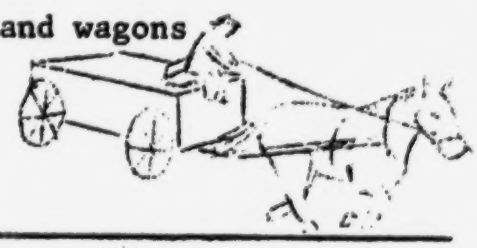
1.	YES	NO	16.	YES	NO
2.	YES	NO	17.	YES	NO
3.	YES	NO	18.	YES	NO
4.	YES	NO	19.	YES	NO
5.	YES	NO	20.	YES	NO
6.	YES	NO	21.	YES	NO
7.	YES	NO	22.	YES	NO
8.	YES	NO	23.	YES	NO
9.	YES	NO	24.	YES	NO
10.	YES	NO	25.	YES	NO
11.	YES	NO	26.	YES	NO
12.	ES	NO	27.	YES	NO
13.	S	NO	28.	YES	NO
14.	YS	NO	29.	YES	NO
15.	YE	NO	30.	YES	NO

1.	YES	NO	16.	YES	NO
2.	YES	NO	17.	YES	NO
3.	YES	NO	18.	YES	NO
4.	YES	NO	19.	YES	NO
5.	YES	NO	20.	YES	NO
6.	YES	NO	21.	YES	NO
7.	YES	NO	22.	YES	NO
8.	YES	NO	23.	YES	NO
9.	YES	NO	24.	YES	NO
10.	YES	NO	25.	YES	NO
11.	YES	NO	26.	YES	NO
12.	YES	NO	27.	YES	NO
13.	YES	NO	28.	YES	NO
14.	YES	NO	29.	YES	NO
15.	YES	NO	30.	YES	NO

Name _____

1. car  hammer

2. nail tractor

3. trucks and trains  horses and wagons 

4. baker fireman farmer

5. 1 2

6. 1 2

7. 1 2

8. 1 2

9. 1 2

Attachment B: Instructions for Administering the PET-1.

General Instructions

Periodically throughout the test, children will have to be lightly admonished not to peak.

The children will also need to be frequently praised for doing a good job. The following might serve as a model: PLEASE DON'T SHAKE YOUR HEADS. PLEASE DON'T SAY ANYTHING. PLEASE DON'T PEEK. THIS IS THE BEST CLASS I'VE HAD SO FAR. YOU'RE DOING WELL.

Children will also have to be reminded to mark their answers. Frequently a child will let his mind wander. Saying something like, "WE'RE ON 23. MARK YOUR ANSWER YES OR NO," will bring them back to the test.

If a child gets behind say something like, "THAT'S ALL RIGHT. WE ARE ON NUMBER ____. LET'S ALL START TOGETHER ON (repeat same number)."

Primary grade children get "high" if they are not treated soberly. The atmosphere should be friendly, but too much joking or "talking down" to the children will cause them to lose control. They can be "leveled with" in a non-threatening manner. If the test administrator treats the task in a serious but relaxed, manner the children will react accordingly.

The children will generally work better if they are kept busy. Speeding the pace of the test slightly will often overcome restlessness.

Use hard cover textbooks to shield children's work from prying eyes. If children are sitting at desks, books can be stood on edge to build a wall around each child.

Test Administration

Pass out test booklets.

Tester: WRITE YOUR NAME ON THE TOP OF THIS PAPER. WRITE BOTH OF YOUR NAMES IF YOU CAN. (wait)

LET'S SEE EVERYONE PUT HIS FINGER ON NUMBER ONE. GOOD, PUT YOUR FINGER ON NUMBER TWO. PUT YOUR FINGER ON NUMBER FIFTEEN, IT'S AT THE BOTTOM OF THE PAGE. (pause) NOW, WHO CAN RAISE THEIR HAND AND TELL ME WHERE WE GO AFTER WE HAVE FINISHED FIFTEEN? THAT'S RIGHT. WE GO BACK TO THE TOP OF THE PAGE. PUT YOUR FINGER ON SIXTEEN SO I'LL KNOW THAT YOU KNOW WHERE IT IS. WE ARE GOING TO START AT ONE AND GO ALL THE WAY DOWN THE SIDE OF THE PAGE. THEN WE ARE GOING TO GO BACK TO THE TOP AND GO ALL THE WAY DOWN THAT SIDE.

I AM GOING TO TELL YOU SOME THINGS. IF I TELL YOU SOMETHING THAT IS RIGHT, I WANT YOU TO PUT A CIRCLE AROUND THE WORD "YES". IF I TELL YOU SOMETHING THAT ISN'T RIGHT, I WANT YOU TO PUT A CIRCLE AROUND THE WORD "NO" ON YOUR PAPER.

LET'S DO ONE ON THE BLACKBOARD. (put "1. yes no" on board) IF I SAID (substitute your own name and example) "MR. LARKINS, THAT'S ME, IS WEARING A RED SHIRT." WHICH WORD WOULD WE CIRCLE? THAT'S RIGHT, WE WOULD CIRCLE THE WORD "NO". YOU HAVEN'T LEARNED EVERYTHING THAT I'M GOING TO TALK ABOUT THIS MORNING. SOMETIMES WHEN I SAY SOMETHING YOU WON'T KNOW WHETHER IT IS RIGHT OR NOT. DON'T LET THAT WORRY YOU. GO AHEAD AND TAKE A GUESS, BUT PLEASE DON'T LOOK AT YOUR NEIGHBOR'S PAPER. WE WANT TO KNOW HOW MUCH YOU KNOW.

ALSO, PLEASE DON'T SAY THE ANSWERS OUT LOUD. WHEN YOU SAY THE ANSWER OUT LOUD, EACH PERSON CANNOT DO HIS OWN WORK. IF YOU SAID THE WRONG ANSWER, THE WHOLE CLASS MIGHT GET IT WRONG.

IS THERE ANYONE WHO DOES NOT KNOW WHAT TO DO?

HERE IS NUMBER ONE.

ATTACHMENT C: Selected Percentiles and the Ranges for the Experimental and Control Groups

Group	25th %ile	50th %ile	75th %ile	99th %ile	Range
First Grade					
Experimental	36	39	43	48	28-49
Control	34	37	40	45	19-48
Second Grade					
Experimental	38	41	43	48	29-49
Control	38	40	43	50	28-51